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AUTHOR Sookpreedee, Nipone
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ABSTRACT

The use of different types of media for distance education, and the examination and evaluation of a computer-based distance training program in Thailand are the focus of this paper. After a discussion of the characteristics and types of media-based distance education--including print-based, audio-based, video-based, and computer-based programs--the procedures used for the development and evaluation of a computer-based distance training package on computer operation are outlined. It is noted that the program was tried out by demonstration school students at Bangsaen, and the following findings of that evaluation are presented: (1) trainees used the training package in less time than predicted by computer education experts; (2) the women used less time than the men, but the difference was not statistically significant; (3) the trainees preferred this training package over traditional and lecture training; and (4) each trainee spent a different amount of time using the training package. It is recommended that further research be undertaken to develop training packages using audio, television, teletex, videotex, and laser disks for vocational, technical, and management training. The text is supplemented by a diagram of the computer education distance training program, and 10 additional diagrams are appended. (4 references) (Author/EW)

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VOCATIONAL TECHNICAL AND MANAGEMENT DISTANCE TRAINING TECHNOLOGY
FOR THE TWENTY-FIRST CENTURY:
RESEARCH OF COMPUTER OPERATION TRAINING PACKAGES
STEREOTYPED IN THAILAND

by

Dr. Nipone Sookpreedee
Sukhothai Thammathirat Open University
Bangkok, Thailand

A paper Presented at Twenty-Fourth ICET World Assembly

"Teacher Education for the World of Work:

Economic, Social and Professional Imperatives

for the Twenty-First Century

at Eindhoven University of Technology

Eindhoven, The Netherlands

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ABSTRACT

Sookpreedee, Nipone. " Vocational Technical and Managment Distance Training Technology for the Twenty-First Century: Research of Computer Operation Training Packages Stereotype in Thailand." A Paper Presented at the Twenty Fourth ICET World Assembly at Eindhoven University of Technology Eindhoven, The Netherlands July 20-24, 1987.

The development of communication technology rapidly changes in educational systems. At present, the educational system is in the "Information age". The system is an enlargement or "opening" of educational opportunities to new target populations. Distance training is general term. It denotes the form of training not led by a trainer present in the class-rooms but supported by tutors and an organization at a distance from the trainees. Distance training is felt to be associated exclusively with the systems where such media as printed materials, audio recordings, radio television broadcasts, telephone communication, teletex, videotex, telemultimedia and other media nowadays supplement the systems in what is here called distance training. The purposes of this study were: <1> to study the development of the appropriate computer operation curriculum for Thai people. <2> to study the development of the appropriate stereotype of the computer operation distance training package for Thai society. <3> to gain research data resources for further development of computer training. The findings were: <1> all trainees use distance training package in less time than the estimation of experts in computer education. <2> women use less study time than men, which is not significant in statistics. <3> The trainees have a good attitude fowards the distance training package. The recommendations are for further research on distance training packages which are based on such media as audio, television, computer, teletex, videotex, and laser for vocational, technical and management training.

DISTANCE TRAINING TECHNOLOGY

Distance training is a fairly term. It denotes the form of training not led by a trainer present in the class - rooms but supported by tutors and an organization at a distance from the trainees. Distance training is felt to be associated exclusively with the written word, where as usually printed materials audio recordings and often radio, television, telephone communication, teletex, videotex, telemultimedia and other media nowadays supplement the written word in what is here called distance training. The characteristics of distance training are three types of activities as follows : (1) the development of self training material as courses printed and or recorded which may either be self-contained or of a training - guide type relying on multimedia package. (2) Training at a distance by comments in writing, on the telephone or an audio cassettes or by computer networks on trainees' work submitted (3) counselling and general support of trainees' work by the same distance - training media.

For the trainees this implies interaction with the course material, with tutors and counsellors. The training is an individual activity; however, and the trainees basically work on their own. It is possible to supplement these non - contiguous activities by on - campus tutorials, lectures, laboratory work, counselling sessions and other face - to - face interaction with tutors and fellow - trainees. This is regard as essential in some systems, as marginal in others.

Distance training mainly belongs to adult education for "Lifelong Education" but special forms of supervised distance training have been developed for primary and secondary education in sparsely inhabited areas. Distance training is usually a cost - effective type of training which compare favourably with conventional training.

In terms of communication system, distance training means : in the contiguous training environments, communication is personal and face - to - face ; in the non - contiguous environments communication may be personal and face - to - face for limited periods of time, but it is largely written, machanical, electronic or some other means of communicating at a distance training that is fundamentally an individual process and each person enters the process with techniques and levels of achievement uniquely his own. The method of distance training provides simulataneously an educational device for individualization in three distinct senses -- trainee ability, variety of course offerings and flexibility for time and place of training.

MEDIA FOR DISTANCE TRAINING

The basic of the development of every distance training course is the question : "What medium or media shall we choose to replace the interpersonal communication, usually supported by printed documentation, that is the characteristic way that a course content

is transmitted in the conventional class - room or lecture theatre ?" This is an immediate problem for each course author or each courses team. There is another question that is a corollary to the preceding one : "Once the learning materials have been developed and despatched to the trainees, what media will be used to support distance training ?"

A simple presentation of choice of media available for carrying the content of distance training course might be respresented schematically; thus Dr. Wichit Srisa - an, Rector of STOU (1985) states the following :

1. Availability - It is essential that the chosen instructional media and delivery systems be technologically practicable; that is, the technology to be used in the individual societies must have been adequately developed, and there must be sufficient manpower to make continued use of the technology.

2. Accessibility - The instructional media and the delivery systems to be used must be accessible to both the distance teaching institution and the learners. For example, if television is chosen as an instructional medium, not only must there be appropriate and adequate air time; but also the students must have TV sets capable of picking up the programs.

3. Acceptability - The instructional media must be accepted both by the teachers and the students. This concerns the aptitudes and attitudes of both groups with respect to certain types of media. If the teachers or students are not skilled in the use of a particular medium, it is not likely to be very effective.

4. Validity - The instructional media must be appropriate for achieving the objectives of the learning materials. Care must be taken to choose media which are suitable for the content or subject matter one wishes to convey.

5. Economics - The instructional media must not be overly expensive. This will involve considerations of economics of scale and cost effectiveness.

Once development of distance teaching systems is undertaken in various countries based on the criteria just mentioned, there are two major approaches which can be followed, namely:

1. The Uni-Media or Single Medium System - This is the distance teaching system which has long been used in correspondence education. Printed materials will generally be used as the core medium, but this approach can involve the exclusive use of any single medium, such as radio or television broadcasts. The extramural studies programs of various universities in Australia which use printed materials exclusively are a good example of the Single Medium System.

2. The Multi-Media or Mixed Media System - This is the distance teaching system developed later, most particularly in the period when electronic media came to be used more widely in the field of education. The multi-media system ordinarily employs one medium as the main or core medium with other media playing a supplementary role in order to bring about a more interactive format.

Most distance training systems employ the multimedia system and feature printed, audio , video and computer as the core or based medium.

Print-based. Most of the distance education systems throughout the world, both Western and Eastern, are print-based and likely to remain so. A theoretical basis for the choice of print as the medium of distance systems is given by Peters (1978). To this the reader as referred.

Great advances were made in the use of print-based media in the 1970s. There was a rediscovery of the flexibility of print; introduction of text-processing and typesetting by computer; harnessing of instructional design to course material development and better understanding of the use of layout, illustration and colour. A whole science of the use of advance organizers, guidelines, overviews, pretests, objectives and questioning techniques has developed (Marland and Store, 1982). The Canadian scholars Daniel and Stroud claim that the 1970s. were "the decade of print".

Besides these developments in distance teaching materials other forms of print-based distance education emerged, the most interesting being Courses by Newspaper in which the learning materials are not dispatched to the students but syndicated out for publication in a range of newspapers in a defined area. .

Audio-based. The literature shows that broadcast radio has distinct advantages, especially in developing countries. Young et al. (1980) report extensive use of radio in French and English-speaking Africa and in Latin America.

The advantages of radio are its almost complete availability and its ability to reach isolated audiences quickly and relatively inexpensively. It has four strategic functions: accessing students; publicity and recruitment; variety, enrichment and motivation; pacing. Its disadvantages are well presented by Bates. To these may be added the necessity of requiring students to listen at fixed and often awkward broadcast times and the judgement that it is more successfully used as a motivator than as a carrier of course content.

A decade of research at the Open University of the United Kingdom on the use of non-print media in distance education by Bates and his associated has led to the finding - which may come as a surprise to many - that the 'greatest media development during the Open University's 12 years of existence has been the humble audiocassette'

Audiocassettes are inexpensive, simple to operate, durable and portable; studies carried out in a number of distance institutions in developed countries show that every student with few exceptions in the 1980s, either possessed or has access to an audiocassette recorder. Individuals can control the time and place (a car in a traffic jam) at which learning from audiocassettes occurs, they can be reviewed and replayed as often as needed and provide a confidential setting for two-way communication between teacher and student.

Institutions like the Centre National d'Enseignement par Correspondance in France, which have extensive ranges of courses in modern languages and music, have always been extensive users of

audio-cassettes and the C.N.E.C. has shown how audio-cassettes of exceptional didactic quality can be produced with relatively cheap equipment.

Video-based. The prominence given to broadcast television in distance systems by two major comparative studies, both of which were closely associated with educational television networks, has already been mentioned. In the same way the Open University of the United Kingdom was publicised as the 'new university of the air' rather than as a user of the century-old correspondence tuition mode. The relationship between the OUUK and the BBC is well known and has done much to change the image and status of distance education in the last decade.

Under the heading video-based distance education one needs to consider a selection of the following in addition to broadcast television: telecourses; cable systems; slow scan television; videotaping; teleconferencing; videodiscs; education by satellite; videotex and teletex. A comprehensive introduction to all these possibilities is given by Ruggles et al. (1982) and the articles by both Bates and Sparkes in this reader will enable the reader to commence an evaluation of their value in education at a distance.

Much work was done in the 1970s to identify those didactic problems that are better presented on videotape or television than by face-to-face lecturing or print: the illustration of principles involving dynamic change or movement; the illustration of principles involving two, three or n-dimensional space; the

presentation of geographic features, famous people, famous buildings that are in danger of being destroyed or already dead; the demonstration of social reactions (mother-child), decision making processes (by observation, dramatisation or simulation), and of attitudinal change. (For a complete list see Bates (1982).

It is likely that distance systems will seek to select media that are homebased and not broadcast and therefore the penetration of the videocassette recorder and of videotex systems (Antiope, Telidon, Prestel, Captain) to the homes of individual students will be of vital importance.

Computer-based. A number of distinctions need to be made with regard to the introduction of microcomputers: (i) between the use of microcomputers in classrooms and in distance education, (ii) between the use of microcomputer to deliver courseware in any subject as opposed to courses about microcomputers and programming, (iii) between computerassisted instruction (CAI), a teaching process directly involving a computer in the presentation of instructional materials in an interactive mode, and computer-managed instruction (CMI) which adds features like monitoring and evaluating student progress to CAI.

The costs of developing a valid computer-based distance learning course are high and will remain so for many years to come. Courses presently available on major systems tend to concentrate on elementary presentations of accounting and mathematics, though a number of private institutions have bought time on these systems and developed more complex materials in their own specialist areas.

Some distance universities (the Fernuniversitat is an example) doubt if a computer can carry the complexities of the higher level university courses and plan for all courses, even in computing, to be print-based with the use of the computer restricted to practical applications.

RESEACH PROCEDURE

1. Identify the computer operation distance training package terminal objective.
2. Identify task analysis.
3. Identify entry behavior by pretest.
4. Identify time (as they like) of training.
5. Identify space and place (as they like) of training.
6. Identify basic facilities which require AC power electric supply.
7. Identify groups of training : (Individualized training package)
8. Media design as printed based and cassette tape recorder and low-cost computer as support medium.
9. Develop printed, audio tape for multi-media by the system approach strategy and identify training situation as follows: (a) trainees will be getting active participation. (b) training by the gradual approximation method (c) trainees will be getting immediate feedback (d) trainees will be getting a positive reinforcement of all processes of training.

10. Individual try-out by SWU. Demonstration school students at Bangsaen.

11. Research for a test of cost, time of training package use for distance students at remote areas by tutors in the flour geographic parts of Thailand.

12. Analysis data by use of the t - test and correlation methods.

ADVANTAGES OF THE RESEARCH

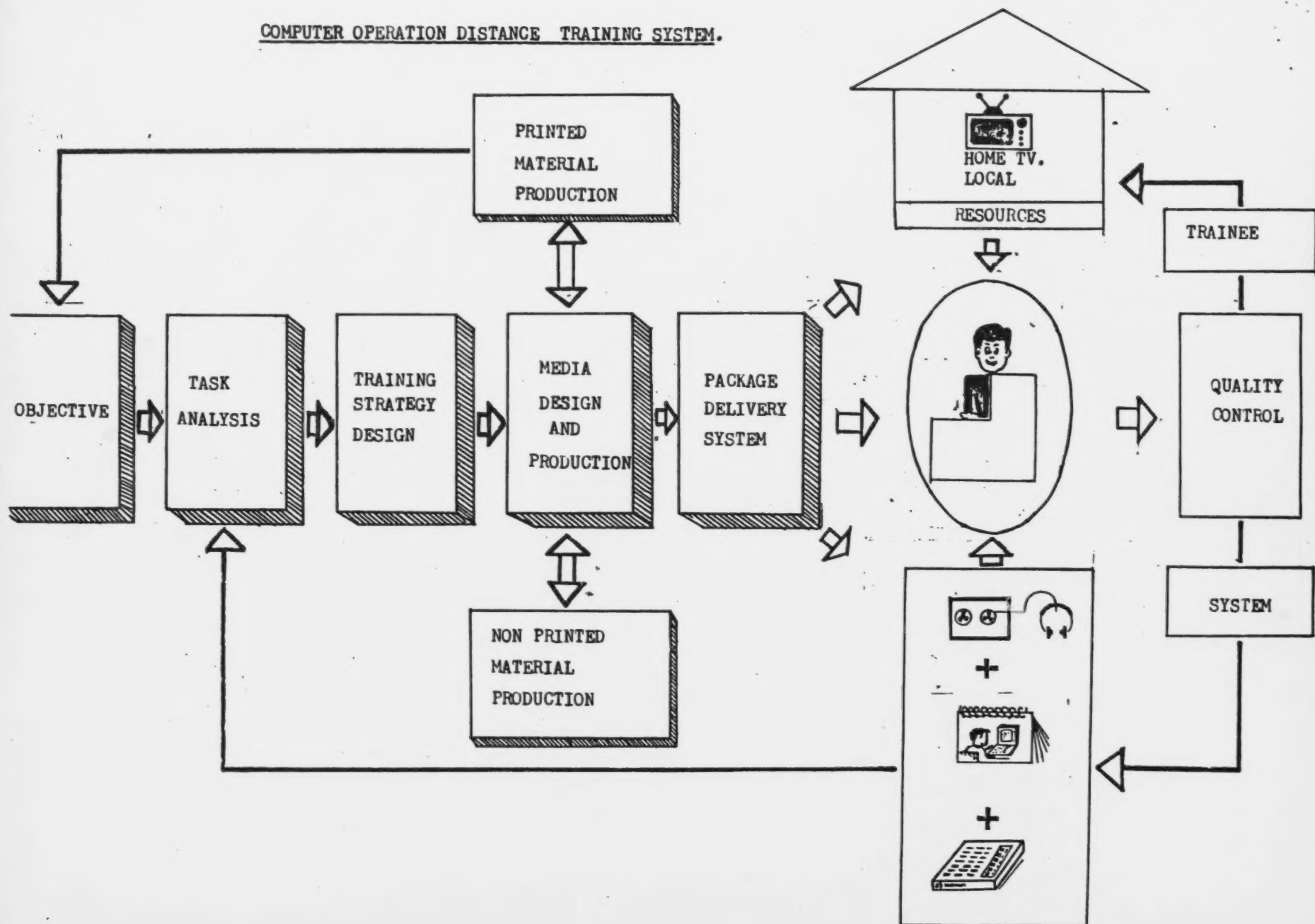
1. Development of the appropriate computer operation curriculum for thai people.

2. Development of the appropriate stereotype of the computer operation distance training package.

3. Development the appropriate media for Thai society.

4. Gainning research data resources for further development of computer training.

COMPUTER OPERATION DISTANCE TRAINING SYSTEM.



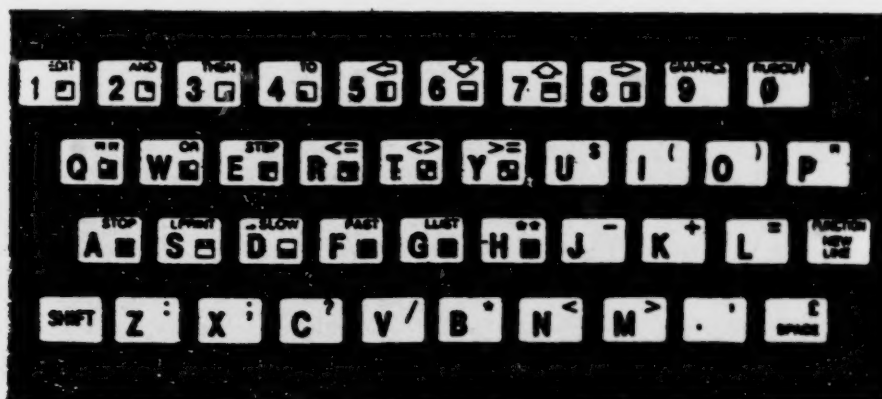
FINDING AND RECOMMENDATIONS

1. All trainees use distance training package by lesser time than estimation of expert in computer education.
2. The woman use lesser time than the man, that is not significant in statistical.
3. The trainees like the distance training package much more than the traditional and lecture training.
4. Each trainee spends difference amount of time in training.
5. Recommendations for further researches on distance training package which are based on the media as audio, television, computer, teletex, videotex and laser for vocational, technical and management training.

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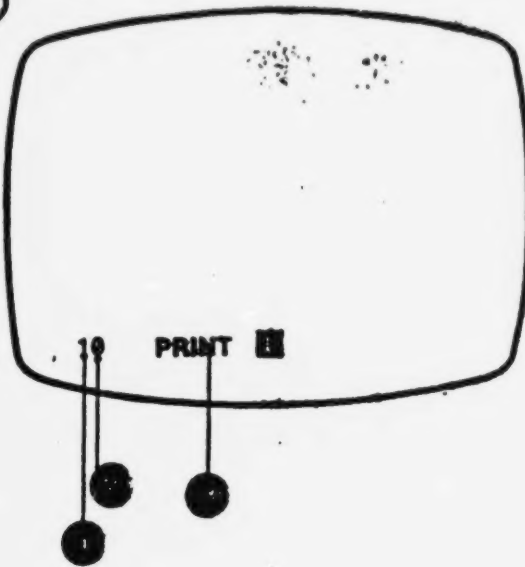
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APPEDIX

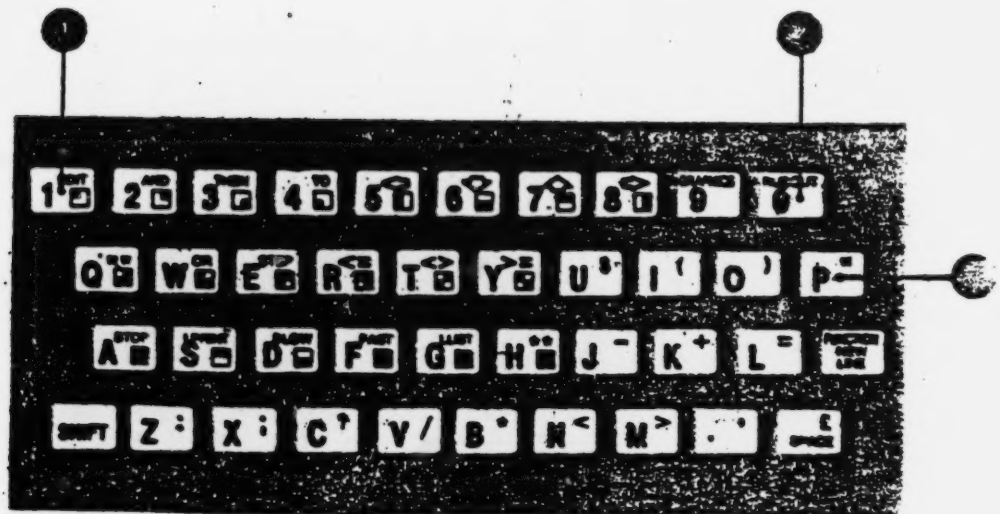
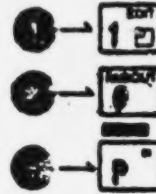


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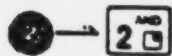
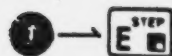
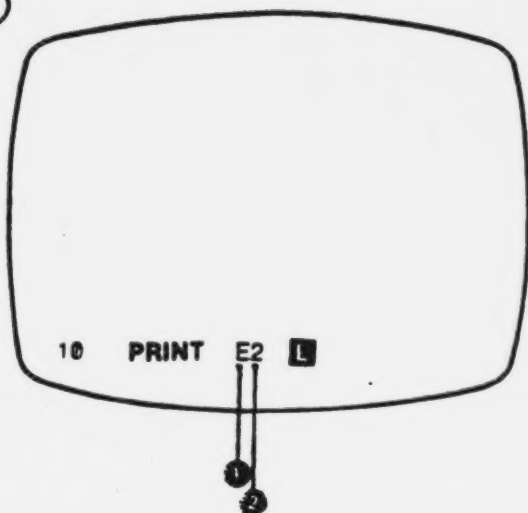


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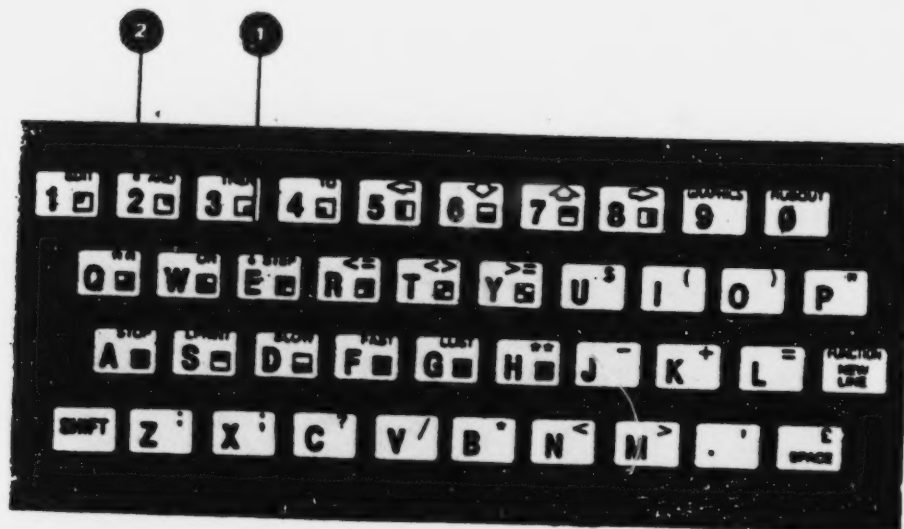


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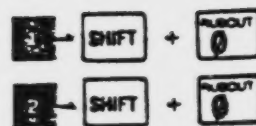
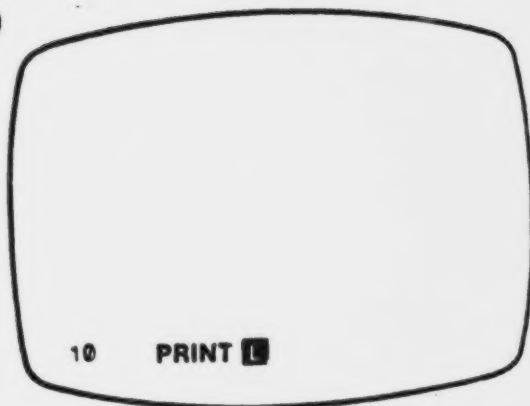


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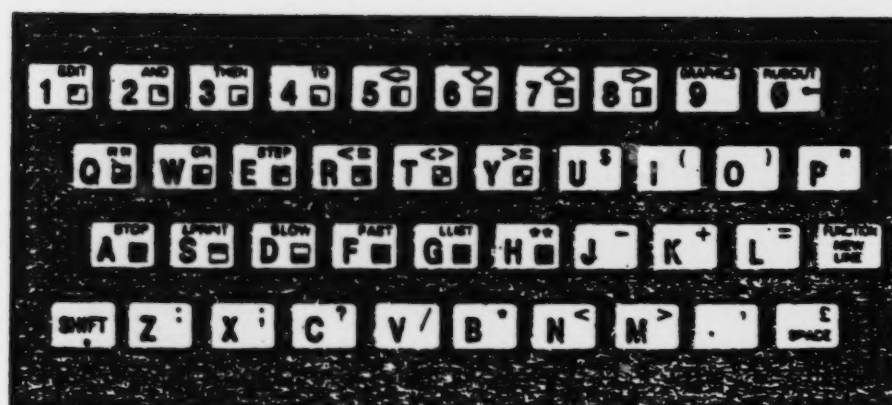


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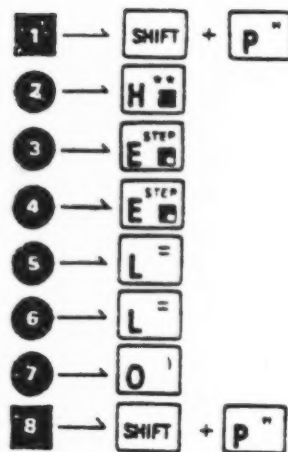
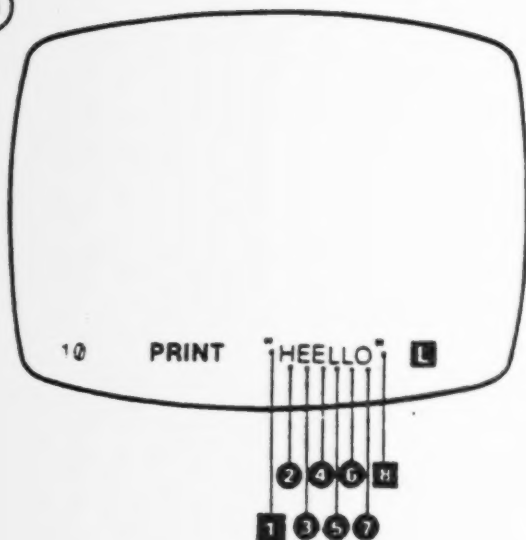
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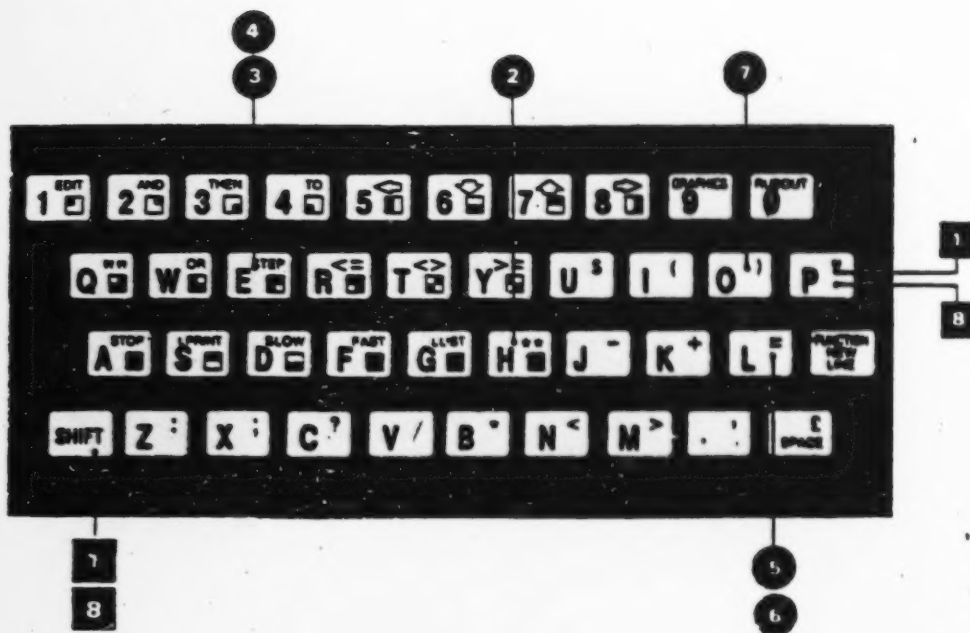
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